(No Model.)

H. A. HARVEY.

RAILROAD SPIKE.

No. 395,898. Patented Jan. 8, 1889.

Fig. 1

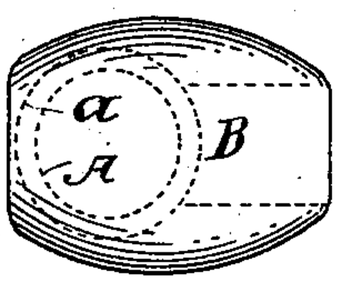


Fig. 2

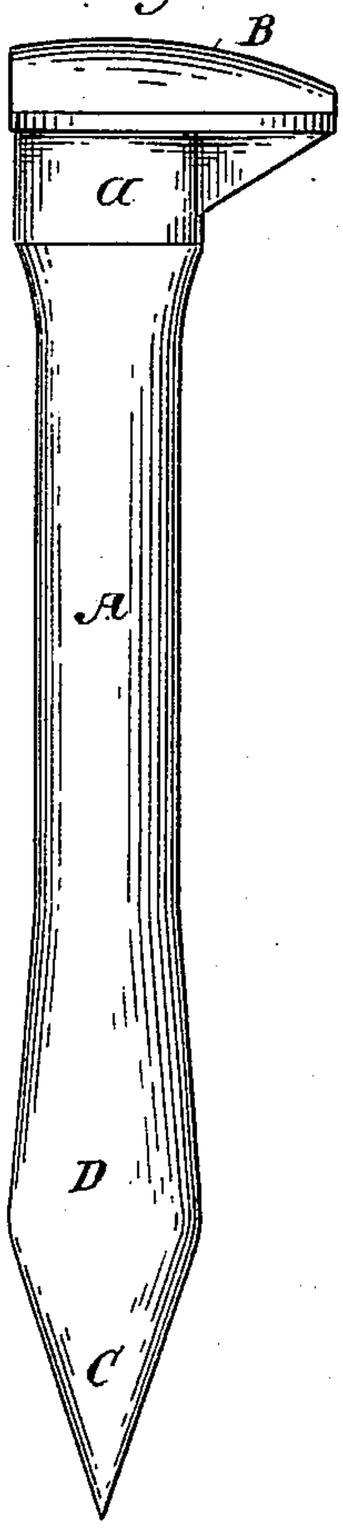


Fig. 3

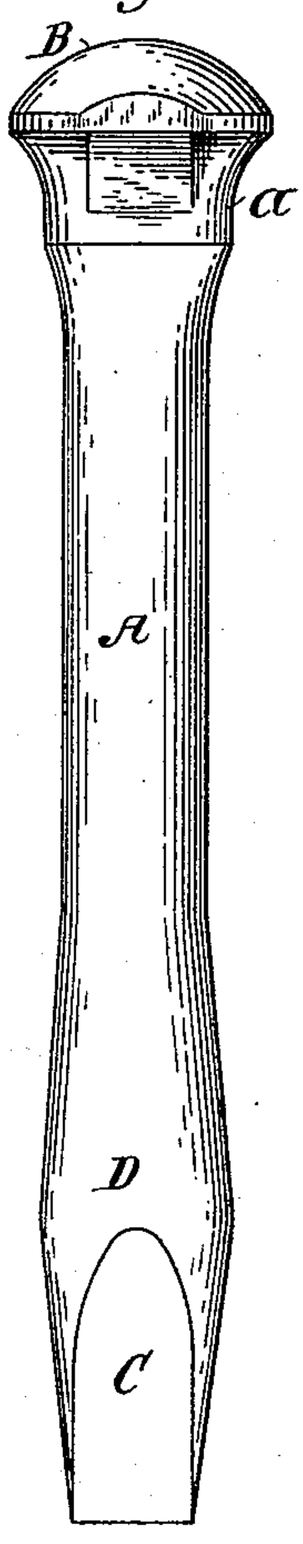


Fig. 4.

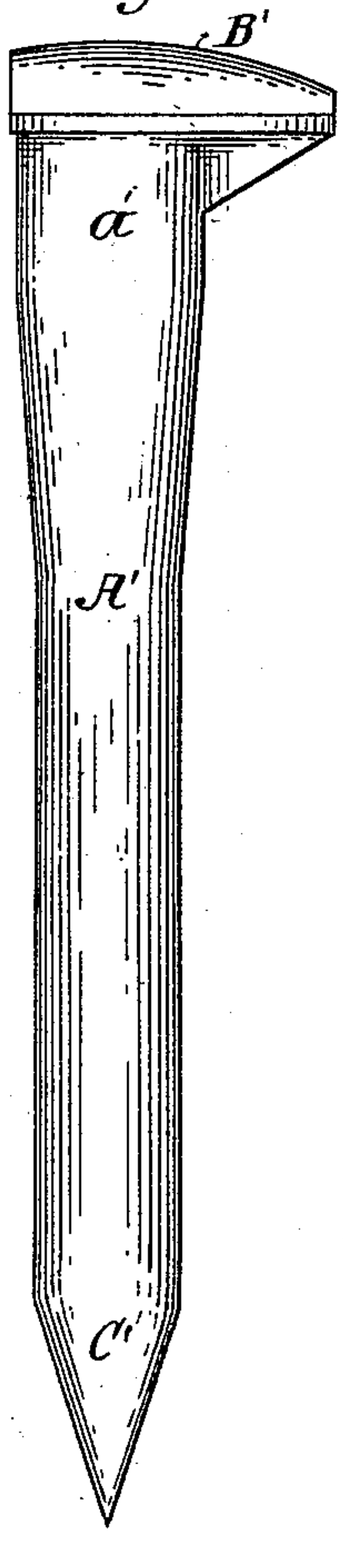
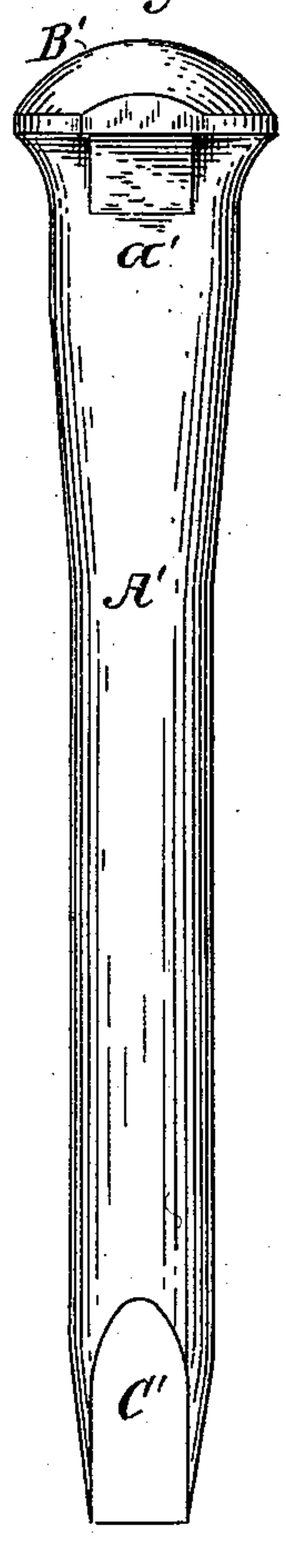


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

HAYWARD A. HARVEY, OF ORANGE, NEW JERSEY.

RAILROAD-SPIKE.

SPECIFICATION forming part of Letters Patent No. 395,898, dated January 8, 1889.

Application filed September 19, 1888. Serial No. 285,791. (No specimens.)

To all whom it may concern:

Be it known that I, HAYWARD A. HARVEY, of Orange, New Jersey, have invented a certain Improvement in Rolled Spikes, of which the following is a specification.

The twofold purpose of this improvement is to increase the holding capacity of metal spikes, especially the class of spikes which are used in fastening the rails to the sleepers of railways, and to obtain for the spikes the increased tenacity and strength which iron and steel acquire in being rolled.

The invention consists in a rolled metallic spike having a cylindrical shank with the end opposite the head flattened convergently into the form of a chisel, the sides of which are also convergent, whereby the width of the cutting-edge of the chisel is made less than the diameter of the adjacent cylindrical portion of the shank.

The object of thus narrowing the width of the cutting-edge of the chisel is to suitably diminish the number of fibers which will be severed in the act of driving the spike into wood. Usually the width of the cutting-edge of a chisel-pointed spike is equal to or in excess of the width of the shank of the spike, and the result is that when such a spike is driven into wood little or no grip is exerted by the wood upon the sides of the spike, the displacement of the wood being in the direction of the length of the fibers. The severing of a certain proportion of the fibers is necessary in order to prevent the splitting of the wood; but by making the width of the chisel-point to a prescribed extent less than the width of the shank portions of the fibers on either side of the spike, respectively, are compressed laterally in opposite directions when the spike is driven in. Owing to the resilience of the laterally-compressed fibers, they bear strongly against the sides of the spike, and thereby increase the grip of the wood upon the spike.

As an additional expedient for increasing the holding capacity of the spike, its shank at a point distant from the head may be provided with a circumferential enlargement, in which case the fibers of the wood, which are compressed laterally in opposite directions when the spike is driven in, spring back toward and against the smaller portion of the shank, and thus very greatly increase the amount of force necessary to be applied to the head of the spike to withdraw it from the wood. To adapt the spike to sustain the application of this increased force, the portion of the shank immediately adjoining the head is also enlarged in diameter.

In the manufacture the bar from which the spike is made is rolled between properly-shaped rolls, which produce upon it a series of the desired enlargements. It is then cut into lengths and headed and pointed in suitable dies. In the act of rolling the metal becomes more dense and its strength and tenacity are greatly increased.

The accompanying drawings of spikes containing the invention are as follows:

Figure 1 is a top view of the head of a spike. Figs. 2 and 3 are respectively front and side elevations of a spike, portions of the shank of which, respectively adjoining the head and the point, are enlarged, as described. Figs. 4 and 5 are respectively front and side elevations of a spike, showing a slightly-different form of enlargement of the portion of the shank adjoining the head, but showing the remaining portion of the shank of uniform diameter.

As will be seen on reference to the drawings, the form of the enlarged portion of the shank adjoining the head may be varied. Thus in Figs. 2 and 3 the shank A is provided at the end adjoining the head B with the rather abrupt enlargement *a*, while in the spike illustrated in Figs. 4 and 5 the shank A′ is provided near the head B′ with the more gradual enlargement *a′*. The chisel-point C is in each case represented as being slightly less in width than the diameter of the smallest part of the shank.

In the spike represented in Figs. 2 and 3 the portion of the shank adjoining the point is provided with the enlargement D.

In the spike illustrated in Figs. 4 and 5 the portion of the shank adjoining the point is not enlarged, and in this case the chisel C′ may, if desired, be made narrower than the chisel C. The extent to which the chisel will be narrowed will be varied with reference to

the kind of wood in which the spike is intended to be driven. The number of fibers requiring to be severed, in order to prevent the splitting of the wood when the spike is driven in, will of course vary in the different kinds of wood. In all cases a certain number of fibers may be left unsevered and be compressed laterally when the spike is driven in without splitting the wood.

What is claimed as the invention is—

1. As a new article of manufacture, a rolled and headed metallic spike provided with a chisel-point the width of the cutting-edge of which is slightly less than the diameter of the adjacent round portion of the shank.

2. A rolled and headed metallic spike having the portion of its shank adjacent to the head enlarged in diameter and having a chisel-point the width of the cutting-edge of which is slightly less than the diameter of the smaller part of the shank.

3. A rolled and headed metallic spike having the portions of its shank respectively adjacent to its head and point larger than the intermediate portion of its shank and provided with a relatively narrow chisel-point, substantially as and for the purpose set forth.

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